ABSTRACT OF THE DISCLOSURE

The disclosure is directed toward improved methods and apparatus for producing PSK signals. Commonly, such signals as Differential Quadrature Phase Shift Keying (DQPSK) are produced by coupling the outputs of an encoder to finite impulse response (FIR) filters. The filters shape the path that the signal takes between the transmission of one symbol and the next symbol The present disclosure discloses a method of generating a signal so that the path taken between transmitted symbols is determined by looking up the intermediate values along the path, using a look-up table. An embodiment of the disclosure receives the present symbol and the next symbol to be transmitted and then serially accesses a series of intermediate points comprising a preferred signal path between the present symbol and the next symbol to be transmitted. Commonly some PSK signals are transmitted by processing the phase and the amplitude of the signal separately. In those applications it is common to delay the amplitude portion of the signal in an analog delay line in order to ensure that the recombined signal will have the proper relationship of phase and amplitude. One preferred embodiment adds a phase offset to the phase signal instead of adding a delay to the amplitude signal. Another preferred embodiment performs phase amplitude synchronization by introducing phase offsets in the look-up table values which represent the signal path between sequentially transmitted signals. The phase offset achieves the same result as the traditional amplitude delay mechanism in synchronizing the phase and amplitude portions of the signal without the traditional delay line hardware.